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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/039,147

01/04/2002

David W. Brown

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08/11/2006

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EXAMINER

SCUDERI, PHILIP S

ART UNIT

PAPER NUMBER

2153

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/039,147

Applicant(s)

BROWN, DAVID W.

Examiner

Philip S. Scuderi

Art Unit

2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7-14 and 16-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-14 and 16-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

As the examiner discussed in the interview on 16 June 2006, the examiner inadvertently cited the wrong reference in the statutory grounds of rejection in the last Office action. The examiner agreed to make this action non-final.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new grounds of rejection presented below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 4, 5, 7-14, 16, 17, and 19-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the motion control system" in line 25. The claim is indefinite because it is unclear which motion control system the limitation refers to because a "plurality of motion control systems" are introduced in the claim.

Claim 8 recites the limitation "the motion control system" in line 2. The claim is indefinite because it is unclear which motion control system the limitation refers to because a "plurality of motion control systems" are introduced in claim 1.

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Claim 9 recites the limitation "the client build module" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the motion control system" in line 24. The claim is indefinite because it is unclear which motion control system the limitation refers to because a "plurality of motion control systems" are introduced in the claim.

Claim 13 recites the limitation "the hardware independent service request method" in lines 27-28. There is insufficient antecedent basis for this limitation in the claim.

Claim 20 recites the limitation "the motion control system" in line 2. The claim is indefinite because it is unclear which motion control system the limitation refers to because a "plurality of motion control systems" are introduced in claim 13.

Claim 21 recites the limitation "the client build module" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4, 5, 7-9, 13, 14, 16, 17, and 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Birchenough (U.S. Patent No. 6,615,091).

Regarding claims 1 and 13, Birchenough teaches a system for transferring hardware independent service requests between a client application (HMI that can be Implementation Independent) and at least one of a plurality of supported motion control systems (controllers) using a communications network (figure 49; column 55, line 12 – column 56, line 44), comprising:

a set of functions (commands) callable by a client application (HMI), where each hardware independent service request corresponds to at least one of the functions (see column 53, line 41 et seq., where the systems uses a hardware independent Servo Model) and is associated with a service performed by one or more of the supported motion control systems (any motion service performed by the controllers such as speed control, basic profile moves, etc.) (figure 49; column 25, line 29 – column 27, line 21; column 53, line 41 – column 54, line 17);

a build module (control coordinator) for building one or more service request envelopes (commands sent to the controllers) that contain the hardware independent service requests associated with functions called by the client application (figure 49; column 25, line 29 – column 27, line 21; column 53, line 41 – column 54, line 17), where

at least one service request envelope conforms to a network protocol associated with the communications network (e.g., conforms to a network protocol that can be transmitted over Ethernet) (figure 49; column 25, line 29 – column 27, line 21), and

the service request envelope is capable of being transmitted across the communications network according to the network protocol (figure 49; column 25, line 29 – column 27, line 21);

a service request format module (controller) for extracting one or more hardware independent service requests from one or more service request envelopes and converting one or

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more hardware independent service requests into at least one hardware independent service request function (see the Servo Model) (column 53, line 41 – column 54, line 17);

a motion services module (controller) that converts hardware independent service functions into at least one hardware dependent motion command (see the Servo Model), where at least one motion control system is selected from the plurality of supported motion control systems (by the control coordinator) and a format of the at least one hardware dependent motion command is determined based on the at least one selected motion control system (see the Servo Model) (figure 49; column 25, line 29 – column 27, line 21; column 53, line 41 – column 54, line 17); and

the selected motion control system operates in response to the hardware dependent motion command to perform services associated with hardware independent service requests (see the Servo Model) (column 53, line 41 – column 54, line 17).

Regarding claims 2 and 14, Birchenough teaches the system as recited in claim 1, in which the service request format module receives a return value from the motion control system in response to at least one hardware independent service request, builds a return response envelope containing the return value, and transmits the return response envelope to the client application (the client receives data from the control system in the form of motion status etc.) (figure 49; column 25, line 29 – column 27, line 21; column 53, line 41 – column 54, line 17).

Regarding claims 4 and 16, Birchenough teaches the system as recited in claim 1, in which the service request format module (controller) invokes the service request functions on the motion control system across a process boundary (on different hardware such as a PM Controller etc.) (figure 49).

Regarding claims 5 and 17, Birchenough teaches the system as recited in claim 1, in which the service request format module invokes service request functions on the motion control system within a single process (on the same hardware using the same processor) (see column 47, line 58 et seq., where the client and server components can be on the same machine).

Regarding claims 7 and 19, Birchenough teaches the system as recited in claim 1, further comprising a data format module that converts request data between a first data format associated with the communications network and a second data format associated with the motion control system (see the Implementation Independent Interface that converts commands between formats compatible with various computing devices and the control system 600) (column 55, line 12 et seq.).

Regarding claims 8 and 20, Birchenough teaches the system as recited in claim 1, but does not appear to expressly disclose determining a set of services supported by the motion control system. However, this feature is inherent because interfacing clients (e.g., see column 55, line 12 et seq.) must have some means for determining which commands can be sent to the control system.

Regarding claims 9 and 21, Birchenough teaches the system as recited in claim 1, further comprising a data management module between the build module and the service request format module (e.g., whichever module provides the mutual exclusion disclosed in column 53, lines 58-62).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-12 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Birchenough (U.S. Patent No. 6,615,091).

Regarding claims 10-12 and 22-24, Birchenough does not expressly disclose routing service requests to a database for persistent storage or processing data stored in the database. Birchenough teaches that the servo model provides mutual exclusion when necessary for public methods (column 53, lines 58-62)). Birchenough does not expressly disclose what happens to service requests that are blocked when other logic has a higher execution priority. However, it was well known in the art to cache lower priority commands in memory (i.e., a in database) until logic with a higher execution priority unblocks a blocked section of code (e.g., using mutex objects). Thus, it would have been obvious (if not necessary) to cache lower priority commands in memory (i.e., a in database) until logic with a higher execution priority unblocks a blocked section of code, thereby making sure the blocked calls do in fact execute and the system provides the requested services.

Conclusion

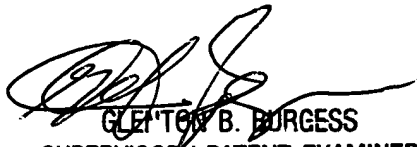
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip S. Scuderi whose telephone number is (571) 272-5865. The examiner can normally be reached on Monday-Friday 9:00 am - 5:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton B. Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PS


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